

24. The method of claim 5 wherein said substrate is a printed wiring board substrate.
25. The method of claim 6 wherein said substrate is a printed wiring board substrate.
26. The method of claim 7 wherein said substrate is a printed wiring board substrate.
27. The method of claim 8 wherein said substrate is a printed wiring board substrate.
28. The method of claim 19 wherein said substrate is a printed wiring board substrate.

REMARKS

Claim 1 has been amended to provide increased breadth and overcome the rejection under 35 U.S.C. 112, second paragraph, and claims 19 to 28 have been added. Claim 19 corresponds to claim 17 which was a restricted claim in the parent application and should have been included in the subject application ab initio.

Claims 1 and 2 were rejected under 35 U.S.C. 102(e) as being anticipated by Chiu et al. (U.S. 6,121,678). The rejection is respectfully traversed.

Claim 1 requires, among other steps, the step of providing a plurality of pairs of traces on the surface, each trace of each of the pairs of traces extending to a different one of the ball pads and extending to ball pads on a plurality of the rows and columns, each trace of each of said pair of traces being spaced from the other trace of said pair by up to a ball pitch, being maximized for identity in length and having up to one ball pitch difference in length and being maximized for parallelism and spacing. No such step is taught or suggested by Chiu et al. either alone or in the total combination as claimed. While the Examiner has stated that such features are set forth in Chiu

et al. at column 5, lines 47 to 49, a reading of such section will immediately indicate that no such features are taught or even remotely suggested therein.

Claim 2 depends from claim 1 and therefore defines patentably over Chiu et al. for at least the reasons presented above with reference to claim 1.

Claim 2 further restricts claim 1 by requiring that each of the traces of the pair be further maximized for identity in cross-sectional geometry. No such combination is taught or suggested by Chiu et al.

Claims 3 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. The rejection is respectfully traversed.

Claims 3 and 4 depend from claims 1 and 2 and therefore define patentably over Chiu et al. for at least the reasons presented above with reference to claims 1 and 2.

In addition, claims 3 and 4 further limit claims 1 and 2 respectively by requiring the step of applying a differential signal pair to at least one of the pairs of traces. No such combination is taught or suggested by Chiu et al.

Claims 5 to 8 were rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. in view of Karnezos (U.S. 5,409,865). The rejection is respectfully traversed.

Claims 5 to 8 depend from claims 1 to 4 respectively and therefore define patentably over Chiu et al., Karnezos and any proper combination of these references for at least the reasons set forth above with reference to claims 1 to 4 since Karnezos fails to overcome the deficiencies in Chiu et al. as demonstrated above.

In addition, claims 5 to 8 further restrict claims 1 to 4 respectively by requiring the step of providing a further surface insulated from the surface, a plurality of the traces being disposed on the

further surface. No such combination is taught or suggested by Chiu et al., Karnezos or any proper combination of these references.

Newly added claims 19 to 28 depend from one of the above-discussed claims and therefore define over the applied references for at least the reasons presented above with reference to the claims from which these claims depend.

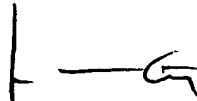
In addition, claim 19 requires that the substrate have at least first, second and third rows and first, second, third and fourth columns of the ball pads in a matrix array, a first trace of a first pair of the traces extending to a ball pad in the first row of the second column closest to the chip and a second trace of the first pair of traces extending to a ball pad in the second row of the second column and between the first column and second column which is adjacent to the first column, a first trace of a second pair of the traces extending to a ball pad in the first row of the third column closest to the chip and a second trace of the second pair of traces extending to a ball pad in the second row of the third column and between the third column and the fourth column which is adjacent to the third column, and first and second traces of a third pair of the traces extending to ball pads in the third row of the second and third columns and disposed between the second and third columns. No such features are taught or suggested by any of the cited references either alone or in the total combination as claimed.

Claims 20 to 28 further limit claims 1 to 8 and 19 by requiring that the substrate be a printed wiring board substrate. No such feature is taught or suggested by any of the cited references in the combination as claimed.

A clean copy of all of the active claims is attached hereto.

In view of the above remarks, favorable reconsideration and allowance are respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'J. M. Cantor', written over a horizontal line.

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